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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:
Brian M. Hackworth

Serial No.: 09/862,949

Examiner: Peng Ke

Filed: May 22, 2001

Art Unit: 2174

For: SYSTEM AND METHOD FOR CONSOLIDATED REPORTING OF CHARACTERISTICS FOR A GROUP OF FILE SYSTEMS

Confirmation No.: 9748

Cesari and McKenna, LLP
88 Black Falcon Avenue
Boston, MA 02210
July 24, 2009

CERTIFICATE OF TRANSMISSION

I hereby certify that the following paper(s) is/are being electronically transmitted to the Patent and Trademark Office by EFS-Web on July 24, 2009.

/Elaine Cruz/
Elaine Cruz

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

BRIEF ON APPEAL UNDER 37 C.F.R. § 41.37

This Brief on Appeal is filed after filing of the Notice of Appeal filed on May 26, 2009.

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(C) STATEMENT OF REAL PARTY IN INTEREST

The Real Party in Interest was assignee Network Appliance, Inc., 495 East Java Drive, Sunnyvale, California, Recorded at Reel/Frame 011949/0267 on the recordation date 07/02/2001. The corporate name of assignee was changed to NetApp, at the same address.

Accordingly, the Real Party in Interest is presently NetApp, Inc., 495 East Java Drive, Sunnyvale, California.

(D) RELATED APPEALS AND INTERFERENCES:

Applicant, and Applicant's attorneys, are unaware of any pending appeals, interferences or judicial proceedings that are related to this appeal.

(E) STATUS OF CLAIMS:

The status of the Claims pursuant to MPEP 1205.02 (iii) is:

Claims 1-76 are cancelled.

Claims 77-110 are pending.

Claims 77-110 are rejected by a FINAL Office Action mailed on February 24, 2009.

Rejections of rejected Claims 77-110 are appealed herein.

(F) STATUS OF AMENDMENTS:

No amendments have been filed subsequent to final rejection.

(G) SUMMARY OF CLAIMED SUBJECT MATTER:

The problem solved by the present invention, as set out in Applicant's Specification at Page 2 Line 21 – Page 3 Line 12 is given as:

"Currently available network administration tools enable an operator to retrieve various status and performance information/reports from individual volumes, or from the entire array of network devices. While such reporting is valuable, it is often limited in usefulness, particularly where a large network of disparate users is present. For example, a large organization such as a bank may have a variety of separate departments, each having its own requirements and characteristics of network use. In order to effectively monitor and administer the various departments it is desirable to divide volumes into separate reporting groups. In addition, it may be desirable to selectively group certain volumes into more than one group where a given volume may cross certain departmental lines. For example upper management may wish to view data from a variety of departments, that are otherwise restricted to individuals in the particular departments. Similarly, certain departments may be subject to system alerts that are particularly critical. For example, the bank's credit card department may be more concerned about low storage than the safe deposit box department due to the relatively greater rate at which credit card transactions are accumulated. Having a low-storage alert tailored to this critical group can expedite action by the administrator.

Accordingly, it is an object of the present invention to provide a system and method for selectively grouping discrete volumes of a network storage arrangement into separate groups that may be a subset of the overall network architecture. This system and method should provide customization and versatility with respect to the type of information that are reported for the various groups and should allow alert information to be tailored to the particular group."

Applicant's invention is summarized by Applicant in Applicant's Specification at Page 3 Line 14 – Page 4 Line 23 as:

"This invention overcomes the disadvantages of the prior art by providing a system and method for enabling one or more storage volumes and associated devices on one or more storage appliances (filers) to be combined or consolidated into arbitrary groups so that statistical information related to performance, operational status and other usage-based parameters can be provide to interested parties associate with the group. The

volumes can be drawn from different storage appliances, and their statistical information can be grouped/consolidated so as to allow administration and access by a common group of administrators or users.

According to a preferred embodiment, the grouping of volumes is controlled via a management station that is attached to the network containing the volumes. The management station includes a graphical user interface that allows the groups to be organized and displayed. A monitor process polls the volumes and devices for statistical information and returns it to the management station. There is a database that stores information about users in the group and various threshold values that are associated with the statistical information. The monitor process compares the thresholds to the monitored statistical information and determines whether an event has occurred. If an event has occurred, then the monitor process notifies an event process that determines whether there are listed any interested parties in the event, and, if so, how to notify the parties. In a typical form of notification, the event process can e-mail at least some of the interested parties in the group (e.g. users, administrators, managers) if an event has occurred. Similarly, the notification can take the form of an alarm, alert, telephone call or page to an interested party that is implemented through appropriate automated systems. There is also a command process that generates displays on the statistical information using, preferably a web-based format that is accessed by a browser on the management station's graphical user interface or on an interested party's client display.

According to a preferred embodiment, the graphical user interface can display statistical information in connection with the group in a variety of formats that can be organized based upon the group's volumes, the devices within volumes (e.g. disks), the storage appliances implicated by the group, or with respect to selected events or alerts. The information can include color-coded alert information or status displays that show the relative severity of the problem associated with the event/alert (e.g. low storage, disk failure and the like).

According to another aspect of the invention statistical information stored on the database resulting from the polling of the monitor process can be bundled in various time periods (e.g. days, weeks, quarters) that each have roughly the same number of intervals, each bundle having a different relative time span between respective intervals. In this manner samples for more recent time periods are maintained in smaller intervals, while samples for older time periods are maintained at successively longer sample intervals. This reduces the concomitant burden on the database."

Pursuant to MPEP 1205.02 (v), a copy of each independent claim is set out.

Claims 77, 90, 103, and 104 are the independent claims. The independent claims are

annotated to give a reference to the Specification by page and line number, and to the drawings by Reference Numerals as an aid to presenting a concise explanation of the subject matter defined in each of the independent claims.

The annotation of each independent claim begins at the top of a new page.

Claim 77 is an independent method claim.

77. A method for managing a computer network, comprising:

operating a plurality of servers connected to the network, each server of the plurality of servers connected to one or more storage devices;

(Spec. Page 1 Line 20-Page 2 Line 13; Page 6 Line 1–Page 9 Line 22; Fig. 1 Ref Num 110, 112, 120, 122; Fig. 2 Ref Num 110, 124, 240, 242, 244, 246)

organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

(Spec. Page 6 Line 15–Page 9 Line 22; Fig. 1 and Fig. 2, Ref Num 120, 122, 110, 112; Spec. Page 10 Line 27–Page 11 Line 9; Fig. 4, Fig. 5, Ref Num 400, 402, 404, 406, 408, 410, 500, 502, 504, 506, 510, 512)

consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

(Spec. Page 3 Lines 14-21; Spec. Page 6 Line 28–Page 7 Line 19; Fig. 1 Ref Num 144, 146, 148; Spec. Page 10 line 20-Page 12 line 7; Spec. Page 12 Line 16–Page 15 Line 23; Fig. 6 Ref Num 140, 144, 604; Spec. Page 14 Lines 22-29; Fig. 8 Fig. 9 Ref Num 802, 804, 807, 908)

identifying a party interested in statistical information related to operation of the group of volumes using the graphical user interface;

(Spec. Page 3 Lines 14-21; Page 12 Lines 8-15)

polling all servers within the group of volumes, by a monitoring process, for statistical information;

(Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 608, 152, 602, 614, 616, 144, 612; Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

combining statistical information from the servers within the group of volumes in order to provide a statistical information for the group of volumes;

(Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 600, 608, 152, 602, 612, 614, 616, 144, 612, Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

displaying, on the graphical user interface, the statistical information for the group of volumes;

(Spec. Page 15 Line 12 – Page 17 Line 4; Fig. 9 RefNum 904, 906, 908, 910, 912, 914; Fig. 12 Ref Num 1200, 1202, 1204, 1206, 1208, 1210, 1212, 1214, 1216, 1220)

comparing the monitored statistical information to a threshold value to determine whether an event has occurred; and

(Spec. Page 3 Line 22–Page 4 Line 9; Spec. Page 11 Line 24 – Page 12 Line 7; Fig. 5 Ref Num 500, 512; Page 12 Lines 25- Page 13 Line 6, Fig. 7 Ref Num 704; Page 16 Lines 13-24,; Fig. 12 RefNum 812, 1200, 1206)

in response to determining that an event has occurred, notifying the interested party.

(Spec. Page 3 Line 22–Page 4 Line 9; Page 12 Line 16–Page 14 Line 4; Fig. 6 RefNum 612, 616, 144; Page 14 Line 22–Page 16 Line 24; Fig. 7 Ref Num 706, 708, 710, 712, 714; Fig. 8, Fig. 9, Fig. 11, Fig. 12 Ref Num 800, 900, 1000, 1100, 1200)

Claim 90 is an independent apparatus claim.

90. (Previously Presented) A computer network apparatus, comprising:

a plurality of servers, each server of the plurality of servers connected to one or more storage devices;

(Spec. Page 1 Line 20-Page 2 Line 13; Page 6 Line 1–Page 9 Line 22; Fig. 1 Ref Num 110, 112, 120, 122; Fig. 2 Ref Num 110, 124, 240, 242, 244, 246)

a plurality of volumes stored across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

(Spec. Page 6 Line 15–Page 9 Line 22; Fig. 1 and Fig. 2, Ref Num 120, 122, 110, 112; Spec. Page 10 Line 27–Page 11 Line 9; Fig. 4, Fig. 5, Ref Num 400, 402, 404, 406, 408, 410, 500, 502, 504, 506, 510, 512)

a group of volumes formed by consolidating two or more selected volumes of the plurality of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

(Spec. Page 3 Lines 14-21; Spec. Page 6 Line 28–Page 7 Line 19; Fig. 1 Ref Num 144, 146, 148; Spec. Page 10 line 20-Page 12 line 7; Spec. Page 12 Line 16–Page 15 Line 23; Fig. 6 Ref Num 140, 144, 604; Spec. Page 14 Lines 22-29; Fig. 8 Fig. 9 Ref Num 802, 804, 807, 908)

statistical information related to operation of the group of volumes, the statistical information identified as being of interest to a party using the graphical user interface;

(Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 600, 608, 152, 602, 612, 614, 616, 144, 612, Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

a monitoring process used to poll all servers within the group of volumes;

(Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 608, 152, 602, 614, 616, 144, 612; Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

statistical information combined from the servers within the group of volumes in order to provide a statistical information for the group of volumes;

(Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 600, 608, 152, 602, 612, 614, 616, 144, 612, Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

the graphical user interface further configured to display the statistical information for the group of volumes;

(Spec. Page 15 Line 12 – Page 17 Line 4; Fig. 9 RefNum 904, 906, 908, 910, 912, 914; Fig. 12 Ref Num 1200, 1202, 1204, 1206, 1208, 1210, 1212, 1214, 1216, 1220)

the monitored statistical information is compared to a threshold value to determine whether an event has occurred; and

(Spec. Page 3 Line 22–Page 4 Line 9; Spec. Page 11 Line 24 – Page 12 Line 7; Fig. 5 Ref Num 500, 512; Page 12 Lines 25- Page 13 Line 6, Fig. 7 Ref Num 704; Page 16 Lines 13-24,; Fig. 12 RefNum 812, 1200, 1206)

the party is notified if it is determined that an event has occurred.

(Spec. Page 3 Line 22–Page 4 Line 9; Page 12 Line 16–Page 14 Line 4; Fig. 6 RefNum 612, 616, 144; Page 14 Line 22–Page 16 Line 24; Fig. 7 Ref Num 706, 708, 710, 712, 714; Fig. 8, Fig. 9, Fig. 11, Fig. 12 Ref Num 800, 900, 1000, 1100, 1200)

Claim 103 is an independent article of manufacture (computer readable storage media) claim.

103. (Previously Presented) A computer readable storage media, comprising:

said computer readable media containing instructions for execution on a processor for the practice of a method of managing a computer network, the method having the steps of,

(Spec. Page 8 Lines 10-13)

operating a plurality of servers connected to the network, each server of the plurality of servers connected to one or more storage devices;

(Spec. Page 1 Line 20-Page 2 Line 13; Page 6 Line 1–Page 9 Line 22; Fig. 1 Ref Num 110, 112, 120, 122; Fig. 2 Ref Num 110, 124, 240, 242, 244, 246)

organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

(Spec. Page 3 Lines 14-21; Spec. Page 6 Line 28–Page 7 Line 19; Fig. 1 Ref Num 144, 146, 148; Spec. Page 10 line 20-Page 12 line 7; Spec. Page 12 Line 16–Page 15 Line 23; Fig. 6 Ref Num 140, 144, 604; Spec. Page 14 Lines 22-29; Fig. 8 Fig. 9 Ref Num 802, 804, 807, 908)

consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

(Spec. Page 3 Lines 14-21; Spec. Page 6 Line 28–Page 7 Line 19; Fig. 1 Ref Num 144, 146, 148; Spec. Page 10 line 20-Page 12 line 7; Spec. Page 12 Line 16–Page 15 Line 23; Fig. 6 Ref Num 140, 144, 604; Spec. Page 14 Lines 22-29; Fig. 8 Fig. 9 Ref Num 802, 804, 807, 908)

identifying a party interested in statistical information related to operation of the group of volumes using the graphical user interface;

(Spec. Page 3 Lines 14-21; Spec. Page 12 Lines 8-15)

polling all servers within the group of volumes, by a monitoring process, for statistical information;

(Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 608, 152, 602, 614, 616, 144, 612; Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

combining statistical information from the servers within the group of volumes in order to provide a statistical information for the group of volumes;

(Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 600, 608, 152, 602, 612, 614, 616, 144, 612, Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

displaying, on the graphical user interface, the statistical information for the group of volumes;

(Spec. Page 15 Line 12 – Page 17 Line 4; Fig. 9 RefNum 904, 906, 908, 910, 912, 914; Fig. 12 Ref Num 1200, 1202, 1204, 1206, 1208, 1210, 1212, 1214, 1216, 1220)

comparing the monitored statistical information to a threshold value to determine whether an event has occurred; and

(Spec. Page 3 Line 22–Page 4 Line 9; Spec. Page 11 Line 24 – Page 12 Line 7; Fig. 5 Ref Num 500, 512; Spec. Page 12 Lines 25- Page 13 Line 6, Fig. 7 Ref Num 704; Spec. Page 16 Lines 13-24; Fig. 12 RefNum 812, 1200, 1206)

in response to determining that an event has occurred, notifying the interested party.

(Spec. Page 3 Line 22–Page 4 Line 9; Spec. Page 12 Line 16–Page 14 Line 4; Fig. 6 RefNum 612, 616, 144; Spec. Page 14 Line 22–Page 16 Line 24; Fig. 7 Ref Num 706, 708, 710, 712, 714; Fig. 8, Fig. 9, Fig. 11, Fig. 12 Ref Num 800, 900, 1000, 1100, 1200)

Claim 104 is an independent apparatus claim.

104. (Previously Presented) A system, comprising:

a plurality of storage appliances, wherein each storage appliance is configured with at least one volume and each volume is a logical arrangement of a plurality of storage devices;

(plurality of storage appliances) (Spec. Page 1 Line 20-Page 2 Line 13; Page 6 Line 1–Page 9 Line 22; Fig. 1 Ref Num 110, 112, 120, 122; Fig. 2 Ref Num 110, 124, 240, 242, 244, 246)

(volumes) (Spec. Page 3 Lines 14-21; Spec. Page 6 Line 28–Page 7 Line 19; Fig. 1 Ref Num 144, 146, 148; Spec. Page 10 line 20-Page 12 line 7; Spec. Page 12 Line 16–Page 15 Line 23; Fig. 6 Ref Num 140, 144, 604; Spec. Page 14 Lines 22-29; Fig. 8 Fig. 9 Ref Num 802, 804, 807, 908)

a management station executing on a separate server from the plurality of storage appliances, the management station configured to access usage and performance information on the plurality of storage appliances and associated volumes;

(management station) (Spec. Page 6 Line 28-Page 7 Line 19;

(polling) (Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 608, 152, 602, 614, 616, 144, 612; Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

(consolidating) (Spec. Page 3 Lines 14-21; Spec. Page 6 Line 28–Page 7 Line 19; Fig. 1 Ref Num 144, 146, 148; Spec. Page 10 line 20-Page 12 line 7; Spec. Page

12 Line 16–Page 15 Line 23; Fig. 6 Ref Num 140, 144, 604; Spec. Page 14 Lines 22-29; Fig. 8 Fig. 9 Ref Num 802, 804, 807, 908)

(combining) (Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 600, 608, 152, 602, 612, 614, 616, 144, 612, Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

a graphical user interface (GUI) connected to the management station, the GUI configured to allow a user to organize two or more volumes from the plurality of storage appliances into a group of volumes, and the GUI configured to display statistical information relating to the group of volumes, wherein at least two volumes in the group of volumes are located on separate storage appliances of the plurality of storage appliances;

(GUI) (Spec. Page 15 Line 12 – Page 17 Line 4; Fig. 9 RefNum 904, 906, 908, 910, 912, 914; Fig. 12 Ref Num 1200, 1202, 1204, 1206, 1208, 1210, 1212, 1214, 1216, 1220)

(group) (Spec. Page 3 Lines 14-21; Spec. Page 6 Line 28–Page 7 Line 19; Fig. 1 Ref Num 144, 146, 148; Spec. Page 10 line 20-Page 12 line 7; Spec. Page 12 Line 16–Page 15 Line 23; Fig. 6 Ref Num 140, 144, 604; Spec. Page 14 Lines 22-29; Fig. 8 Fig. 9 Ref Num 802, 804, 807, 908)

(separate storage appliance) (Spec. Page 6 Line 28-Page 7 Line 19; Fig. 1 RefNum 144, 145, 146, 150, 140, Page 10 Lines 20-26; Page 12 Line 16-Page 14 Line 17; Fig. 1 RefNum 144, 152)

statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes;

(statistical information) (Spec. Page 12 Line 16–Page 14 Line 21; Fig. 6. Ref Num 600, 608, 152, 602, 612, 614, 616, 144, 612, Fig. 7 Ref Num 700, 702, 704, 706, 708, 710, 712, 714)

a management station storage device connected to the management station, the management station storage device configured with a database, the database storing the statistical information for the group of volumes and a threshold value associated with statistical information for the group of volumes; and

(management station storage device) (Spec. Page 12 Lines 25-Page 13 Line 6)

the management station further configured to compare monitored statistical information for the group of volumes with the threshold value and determine that an event has occurred when the monitored statistical information exceeds the threshold value and to notify an interested party of the event.

(compare) (Spec. Page 3 Line 22–Page 4 Line 9; Spec. Page 11 Line 24 – Page 12 Line 7; Fig. 5 Ref Num 500, 512; Page 12 Lines 25- Page 13 Line 6, Fig. 7 Ref Num 704; Page 16 Lines 13-24,; Fig. 12 RefNum 812, 1200, 1206)

(notify interested parties) (Spec. Page 3 Line 22–Page 4 Line 9; Page 12 Line 16–Page 14 Line 4; Fig. 6 RefNum 612, 616, 144; Page 14 Line 22–Page 16 Line 24;

Fig. 7 Ref Num 706, 708, 710, 712, 714; Fig. 8, Fig. 9, Fig. 11, Fig. 12 Ref Num 800, 900, 1000, 1100, 1200)

(H) GROUNDS OF REJECTION:

The grounds of rejection to be reviewed on Appeal, as set out in the FINAL Office Action mailed on February 24, 2009 are:

A.

"Claims 77-81, 83, 85, 86, 88-94, 96, 98-104, and 106-109 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Jong US Patent 7,107,534, in view of Manghirmalani US Patent 5,819,028 further in view of Chu 6,346,954."

B.

"Claims 82, 84, 95, 97, and 110 rejected under 35 U.S.C. 103(a) as being unpatentable over anticipated De Jong, US Patent 7,107,534, in view of Manghirmalani US Patent 5,819,028 in view of Chu US Patent 6,346,954 further in view of Welter US Patent 6,633,912."

C.

"Claims 87, 100, and 105 rejected under 35 U.S.C. 103(a) as being unpatentable over anticipated De Jong, US Patent 7,107,534, in view of Manghirmalani US Patent 5,819,028 in view of Chu US Patent 6,346,954 further in view of York US Patent 6,505,256"

(I) ARGUMENT:

Analysis of case law concerning 35 U.S.C. 103(a)

First, Applicant sets out the relevant case law concerning analysis of a claimed invention under 35 U.S.C. 103(a)

The Supreme Court of the United States revisited an analysis of 35 U.S.C. recently in the case *KSR International v. Teleflex,* 550 U.S. 398, 127 S.Ct. 1727, 82 U.S.P.Q 2d 1385 (decided April 30, 2007).

In *KSR*, the Court referred to *Graham* v. *John Deere Co. of Kansas City,* 383 U. S. 1, 86 U.S. S. Ct 684, 148 U.S.P.Q. 459 (1966) as setting out a framework for considering patentability under 35 U.S.C. 103(a), as:

> "In *Graham* v. *John Deere Co. of Kansas City,* 383 U. S. 1 (1966), the Court set out a framework for applying the statutory language of §103, language itself based on the logic of the earlier decision in *Hotchkiss* v. *Greenwood,* 11 How. 248 (1851), and its progeny. See 383 U. S., at 15-17. The analysis is objective:
>
> 'Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.' *Graham.,* 383 U.S. 1, at 17-18."

In applying the *Graham* framework for analysis, the Court stated: "A court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions." *KSR*, 550 U.S. 398, 401.

Further, the Court in *KSR* stated: "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 550 U.S. 398, 401, citing *United States* v. *Adams,* 383 U. S. 39, 40, 86 S.Ct. 708, 148 U.S.P.Q. 479 (1966), a companion case to *Graham.*

"The Court relied upon the corollary principle that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." *KSR*, 550 U.S. 398, 416.

A corollary to these principles is that when a claim is to elements not disclosed by the prior art, then the claim is patentable under 35 U.S.C. 103(a).

Applicant applies this analysis of the law of 35 U.S.C. 103(a) to the presently claimed invention by pointing out that Applicant's claim is to elements not mentioned by any of the cited art. That is, the cited art is completely silent concerning elements set forth in Applicant's independent claims, and therefore Applicant's independent claims are allowable under 35 U.S.C. 103(a).

CLAIMS 77-89

Applicant respectfully urges that Claim 77 and claims 78-89 which depend from claim 77, are patentable over all cited art.

Claim elements not shown by the cited art are marked in bold italics.

Applicant's invention, as set forth in claim 77, comprises:

77. A method for managing a computer network, comprising:
operating a plurality of servers connected to the network, each server of the plurality of servers connected to one or more storage devices;
organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;
consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;
identifying a party interested in statistical information related to operation of the group of volumes using the graphical user interface;
polling all servers within the group of volumes, by a monitoring process, for statistical information;
combining statistical information from the servers within the group of volumes in order to provide a statistical information for the group of volumes;
displaying, on the graphical user interface, the statistical information for the group of volumes;
comparing the monitored statistical information to a threshold value to determine whether an event has occurred; and
in response to determining that an event has occurred, notifying the interested party.

DeJong (US Patent 7,107,534) discloses a system for obtaining statistical information from a system having a plurality of computers, servers, and storage devices.

Manghirmalani (US Patent 5,819,028) discloses a network management station which has agent software executing on a plurality of network devices. The agents gather diagnostic and status information from their respective network devices, and forward the information to the network management station. The management station then can display the network functionality to a user, as a display of the health of the network.

Chu (US Patent 6,346,954) discloses a graphical interface for organizing a data storage system from a plurality of computers and a plurality of data storage devices. As Chu states in his Summary of the Invention at his Col. 3 lines 46-57:

"A method and system are disclosed for managing a plurality of data storage systems. A plurality of graphically designatable data storage systems are displayed within a computer system display. A subset of the plurality of graphically designatable data storage systems are selected to be utilized in a data storage array. A data distribution mode for the data array is designated. An iconic representation of selected data storage systems of the data storage array is automatically graphically displayed in response to the selected subset of data storage systems and the designated data distribution mode such that complete data storage arrays may be graphically illustrated for management purposes."

Applicant respectfully urges that none of the cited art, DeJong, Manghirmalani, and Chu disclose Applicant's claimed

organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

Applicant's Specification provides a definition of a "volume" at Page 2 Lines 1-5 as follows:

"A filer is organized so that it includes one or more of storage "volumes" that comprise a cluster of physical storage disks, defining an overall logical arrangement of storage space. Currently available filer implementations can serve a large number of discrete volumes (for example 150, although this number is subject to increase). Each volume is generally associated with its own file system (WAFL for example)."

Applicant claims ***organizing a plurality of volumes across the plurality of servers***, where DeJong simply discloses one server, and Manghirmalani discloses a plurality of network devices each executing agent software which reports information to a control computer, and Chu discloses a graphical interface for organizing computers and storage devices into a storage system.

Further, Applicant claims ***consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers***, and none of DeJong, Manghirmalani, or Chu disclose this claimed structure.

Applicant's claimed ***consolidating two or more selected volumes of the plurality of volumes into a group of volumes . . . at least two volumes in the group of volumes are located on separate servers of the plurality of servers***. is absent from all cited art, including DeJong, Manghirmalani, and Chu.

That is, there is no disclosure in the cited art of Applicant's claimed ***group of volumes***. And, there is definitely no disclosure in the cited art of Applicant's claimed ***at least two volumes in the group of volumes are located on separate servers of the plurality of servers***.

The Examiner argues that:

"operating a plurality of servers connected to the network, each server of the plurality of servers connected to one or more storage devices, (see De Jong figure. 13, col. 9, lines 55-col. 10, lines 2)

organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server

assigning consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;(see De Jong, col. 10, lines 7-25)"

Applicant now turns to the text of the DeJong patent. At the sections cited by the Examiner, Figure 13, col. 9 line 55 – col. 10 line 2, DeJong states:

"FIG. 13 therefore represents a quick view of the enterprise 200. Broadly speaking, this view provides a better overview of all the objects in the network enterprise 102 and allows the user to navigate faster through a large hierarchy of items. For instance, the user can see more hosts (i.e., server computers 104) at one time in the list and quickly navigate the hierarchy to see the storage enclosures 106, controllers, and drives. The user may select a host from the list of hosts and then will see a list of all of the storage enclosures attached to that host. The user can then select a storage enclosure (i.e., subsystem) from the list and then see a list of the controllers in that storage enclosure (e.g., a single controller, or two controllers in a dual controller hardware configuration). The user is then able to select a controller and see a list of the drives that it controls."

Applicant respectfully urges that nowhere in these cited lines is there any disclosure of ***consolidating two or more selected volumes of the plurality of volumes into a group of volumes . . . at least two volumes in the group of volumes are located on separate servers of the plurality of servers***. That is, there is no disclosure in the cited lines of DeJong of Applicant's claimed ***group of volumes***. And, there is definitely no disclosure in the cited art of Applicant's claimed ***at least two volumes in the group of volumes are located on separate servers of the plurality of servers***.

The Examiner further argues that De Jong discloses Applicant's inventive steps by the assertion:

"assigning consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;(see De Jong, col. 10, lines 7-25)"

Turning again to the text of the DeJong patent, at the sections cited by the

Examiner, col. 10, lines 7-25, DeJong states:

"FIG. 15 provides a quick view of the logical devices of the enterprise, in accordance with one embodiment of the present invention. For example, this view allows a user to see the logical devices in the enterprise. It provides a better overview of all the objects in the enterprise and allows the user to navigate faster through a large hierarchy of items. Further, the user can see more hosts at one time in the list and quickly navigate the hierarchy to see the subsystems (i.e., storage enclosures 106), controllers, and arrays. The user can select a host from the list of hosts and will then see a list of all of the subsystems attached to that host. The user then selects a subsystem from the list of subsystems and will see a list of the controllers in that subsystem (e.g., a single controller, or two controllers in a dual controller hardware configuration). The user then selects a controller and will see a list of the arrays that it controls."

Careful reading of DeJong at col. 10, lines 7-25 shows that the cited lines have no disclosure of Applicant's claimed ***consolidating two or more selected volumes of the plurality of volumes into a group of volumes . . . at least two volumes in the group of volumes are located on separate servers of the plurality of servers***. That is, there is no disclosure in the cited lines of DeJong of Applicant's claimed ***group of volumes***. And, there is definitely no disclosure in the cited art of Applicant's claimed ***at least two volumes in the group of volumes are located on separate servers of the plurality of servers***.

In sharp contrast, DeJong simply discusses observing all hardware in his system. DeJong makes no reference to logical organization which Applicant claims concerning Applicant's claimed ***consolidating two or more selected volumes of the plurality of volumes into a group of volumes***.

Turning now to the Examiner's assertion concerning Manghirmalani and Chu, the Examiner urges:

"Manghirmalani teaches comparing the monitored statistical information to a threshold value to determine whether an event has occurred; (see Manghirmalani, col. 12, lines 15-50)"

However, Applicant respectfully urges that Manghirmalani simply discloses measuring network parameters, specifying ranges for each, and presenting readings of his network parameters on a graphical "meter", as disclosed by Manghirmalani at his col. 11 lines 53-63, which state:

"FIG. 10 illustrates the process for generating the health of a LAN. Customer network specific knowledge 1000 supplied by the end-user, historical data 1001 and current data 1002 are inputted into the health algorithm 1003. The current data 1002 is fed back into the historical data 901, to be used in future health algorithm 1003 calculations. Based on various parameters concerning the LAN 1004, the clients 1005, and any servers 1006 on the network, the health algorithm 1003 generates and outputs a health score 1007 for the LAN. The health score 1007 is displayed by a health meter on the network management station."

Applicant now turns to the lines cited by the Examiner, Col. 12 lines 15-50, where Manghirmalani states:

"FIG. 12 illustrates a window used to modify the settings for a particular meter type. Formula name 1201 displays the selected meter type. Formula 1202 is comprised of a scroll box 1203 which contains the formula to be applied to the selected meter type 1201. MIB objects/meters 1204 is comprised of a scroll box 1205 which contains a list of MIB objects or meter types which are used in the meter formula 1202. An "*" indicates that the MIB object/meter type is currently being used in the formula. Removal of an MIB object/meter type is accomplished by pointing an clicking a cursor on the desired MIB object/meter in scroll box 1205. Device Type Field 1206 contains the network device type associated with the selected meter type. Display type 1207 indicates the style of the

meter (dial, graph, or digital). History interval 1208 specifies the frequency that the current values are to be stored for historical data. Polling interval 1209 specifies the frequency that the meter values are updated and the display is refreshed. Max value 1210 is the theoretical maximum value of the meter. Green range 1211, yellow range 1212, and red range 1213 are fields which specify the range of meter values defining when the meter valves are in the green, yellow, and red areas respectively. The value of these fields are expressed as a percentage of the maximum meter value. The settings for a meter type can be modified by making the necessary edits in the modify window 1200. Clicking the Apply button 1214 will save the changes to the configuration file. Clicking the Dismiss button 1215 will cause the changes to be ignored.

Selecting Describe button 1216 provides a "notepad" to the user for entering descriptive helpful text concerning the formula or meter."

From a careful reading of these quoted lines from the Manghirmalani patent, there is clearly no disclosure of Applicant's claimed ***consolidating two or more selected volumes of the plurality of volumes into a group of volumes . . . at least two volumes in the group of volumes are located on separate servers of the plurality of servers***.

In sharp contrast Manghirmalani discloses reading network parameters from network devices, and then transmitting the parameter values to a computer which presents a graphical "meter" reading of the measured values. In short, Manghirmalani has no disclosure of Applicant's claimed ***consolidating two or more selected volumes of the plurality of volumes into a group of volumes***.

Turning now to the cited patent, Chu, the Examiner urges:

"Chu teaches consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers.

combining statistical information form the servers within the group of volumes in order to provide a statistical information for the group of volumes; (see Chu, figure, 5, item 72; col. 8, lines 10-20)"

Applicant respectfully notes that, first, Chu sets out his definition of an "Array" in his Background Section at his Col. 1 lines 17-39 which state:

"As the performance of microprocessor and semiconductor memory technology increases, there is a need for improved data storage systems with comparable performance enhancements. Additionally, in enhancing the performance of data storage systems, there is a need for improved reliability of data stored. In 1988, a paper was published by Patterson, Gibson, Katz, A Case for Redundant Arrays of Inexpensive Disks (RAID), International Conference on Management of Data, pgs. 109-116, June 1988. This paper laid the foundation for the use of redundant arrays of inexpensive disks that would not only improve the data transfer rate and data I/O rate over a comparable single disk access, but would also provide error correction at a lower cost.

RAID includes an array of disks which are typically viewed by a host, such as a computer system, as a single disk. A RAID controller may be a hardware and/or software tool for providing an interface between the host and the array of disks. Preferably, the RAID controller manages the array of disks for storage and retrieval and can view the disks of the RAID separately. The disks included in the array may be any type of data storage systems which can be controlled by the RAID controller when grouped in the array."

Applicant then turns to the lines of Chu cited by the Examiner, Chu, figure, 5, item 72; col. 8, lines 10-20, and starting at the beginning of the paragraph at col. 7 line 66, the lines state:

"Referring now to FIG. 5, there is illustrated a tree frame 70 in a graphical user interface which may be utilized in accordance with the method and system of the present invention. In the example of FIG. 5, tree frame 70 displays the iconic representations of the components and configuration of ServeRAID #1 as illustrated at reference numeral 71. The components are hierarchically listed under three categories of Arrays, Logical Drives, and Physical Drives as depicted at reference numerals 72, 73 and 74 respectively. The user may configure an array by tree frame 70 through choosing the available physical drives and placing those drives into an array frame, as will be further described. Further,

the user can see a component list of the physical and logical drives in an array in the tree frame 70."

A careful reading of these quoted lines from Chu indicate that Chu's "Array" is a RAID array of storage disks, and reference to his Fig. 5 indicates that Chu discloses assigning an Array to logical drives (numeral 76) and physical drives (numeral 74).

Nowhere does Chu disclose Applicant's claimed novel ***consolidating two or more selected volumes of the plurality of volumes into a group of volumes***.

Further, nowhere is there any disclosure in the cited art De Jong, Manghirmalani, and Chu of Applicant's claimed

organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, . . .

polling all servers within the group of volumes, by a monitoring process, for statistical information;

combining statistical information from the servers within the group of volumes in order to provide a statistical information for the group of volumes; . . .

comparing the monitored statistical information to a threshold value to determine whether an event has occurred; and

in response to determining that an event has occurred, notifying the interested party.

Applicant respectfully urges that all cited patents are silent concerning Applicant's claimed ***organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server . . . consolidating two or more selected volumes of the plurality of volumes into a group of volumes . . . polling all servers within the group of volumes, by a monitoring process, for statistical information . . . combining statistical information from the servers within the group of volumes in order to provide a statistical information for the group of volumes***.

Applicant respectfully urges that the cited art De Jong, Manghirmalani, and Chu are silent concerning Applicant's claimed ***organizing a plurality of volumes across the plurality of servers . . . consolidating two or more selected volumes of the plurality of volumes into a group of volumes . . . provide a statistical information for the group of volumes***.

The Examiner goes on to state:

"It would have obvious to an artisan at the time of the invention to include Chu's teaching with method of claim De Jong and Manghirmalani in order to allow users with the ability to assign customized groups."

However, Applicant respectfully urges that there is no disclosure in any of the cited art of Applicant's claimed ***organizing a plurality of volumes across the plurality of servers . . . consolidating two or more selected volumes of the plurality of volumes into a group of volumes . . . provide a statistical information for the group of volumes***.

Accordingly, the cited art cannot legally make the present invention obvious under 35 U.S.C. 103(a) as interpreted in the *KSR* case.

That is, Applicant respectfully urges that the cited art, De Jong, Manghirmalani, and Chu are legally incapable of rendering Applicant's claimed invention, as set out in Claim 77, unpatentable under 35 U.S.C. 103(a) because of the absence in each of any disclosure of Applicant's claimed novel ***organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server***;

consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers; . . .

polling all servers within the group of volumes, by a monitoring process, for statistical information;

combining statistical information from the servers within the group of volumes in order to provide a statistical information for the group of volumes; . . .

comparing the monitored statistical information to a threshold value to determine whether an event has occurred; and

in response to determining that an event has occurred, notifying the interested party.

CLAIMS 90-102

Applicant respectfully urges that claim 90 and claims 91-102 which depend from claim 90 are allowable in view of all cited art for the same reasons as set forth for claim 77.

Claim elements not shown by the cited art are marked in bold italics.

Applicant's claimed invention, as set forth in representative claim 90, comprises in part:

90. (Previously Presented) A computer network apparatus, comprising:
a plurality of servers, each server of the plurality of servers connected to one or more storage devices;
a plurality of volumes stored across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;
a group of volumes formed by consolidating two or more selected volumes of the plurality of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;
statistical information related to operation of the group of volumes, the statistical information identified as being of interest to a party using the graphical user interface;
a monitoring process used to poll all servers within the group of volumes;
statistical information combined from the servers within the group of volumes in order to provide a statistical information for the group of volumes;
the graphical user interface further configured to display the statistical information for the group of volumes;
the monitored statistical information is compared to a threshold value to determine whether an event has occurred; and
the party is notified if it is determined that an event has occurred.

Applicant respectfully urges that the cited art, De Jong, Manghirmalani, and Chu

have no disclosure of Applicant's claimed novel

a plurality of volumes stored across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

a group of volumes formed by consolidating two or more selected volumes of the plurality of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

. . .

a monitoring process used to poll all servers within the group of volumes;

statistical information combined from the servers within the group of volumes in order to provide a statistical information for the group of volumes;

. . .

the monitored statistical information is compared to a threshold value to determine whether an event has occurred; and

the party is notified if it is determined that an event has occurred.

Each of these substantive elements of Claim 90 have been argued with respect to Claim 77.

Accordingly, Applicant respectfully urges that claim 90 is patentable over the

cited art De Jong, Manghirmalani, and Chu in view of 35 U.S.C. 103(a) because of the absence from the cited art of Applicant's claimed

a plurality of volumes stored across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

a group of volumes formed by consolidating two or more selected volumes of the plurality of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

. . .

a monitoring process used to poll all servers within the group of volumes;

statistical information combined from the servers within the group of volumes in order to provide a statistical information for the group of volumes;

. . .

the monitored statistical information is compared to a threshold value to determine whether an event has occurred; and

the party is notified if it is determined that an event has occurred.

CLAIM 103

Applicant respectfully urges that Claim 103 is allowable for the same reasons as set out hereinabove for Claim 77.

Claim 103 is an article of manufacture claim, for a computer readable media, which contains computer programming to carry our the steps of method Claim 77, using the hardware referred to in Claim 77.

Accordingly, Applicant respectfully urges that claim 103 is allowable for the same reasons as argued for claim 77.

CLAIMS 104-110

Applicant respectfully urges that Claim 104 and claims 105-110 which depend from claim 104, are patentable over all cited art.

Applicant's claimed invention, as set out in Claim 104, comprises in part:

104. (Previously Presented) A system, comprising:

a plurality of storage appliances, wherein each storage appliance is configured with at least one volume and each volume is a logical arrangement of a plurality of storage devices;

a management station executing on a separate server from the plurality of storage appliances, the management station configured to access usage and performance information on the plurality of storage appliances and associated volumes;

a graphical user interface (GUI) connected to the management station, the GUI configured to allow a user to organize two or more volumes from the plurality of storage appliances into a group of volumes, and the GUI configured to display statistical information relating to the group of volumes, wherein at least two volumes in the group of volumes are located on separate storage appliances of the plurality of storage appliances;

statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes;

a management station storage device connected to the management station, the management station storage device configured with a database, the database storing the statistical information for the group of volumes and a threshold value associated with statistical information for the group of volumes; and

the management station further configured to compare monitored statistical information for the group of volumes with the threshold value and determine that an event has occurred when the monitored statistical information exceeds the threshold value and to notify an interested party of the event.

As set out hereinabove with regard to Claim 77, Applicant respectfully urges that the cited art has no disclosure of Applicant's claimed novel

a graphical user interface (GUI) connected to the management station, the GUI configured to allow a user to organize two or more volumes from the plurality of storage appliances into a group of volumes, and the GUI configured to display statistical information relating to the group of volumes, wherein at least two volumes in the group of volumes are located on separate storage appliances of the plurality of storage appliances;

statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes;

a management station storage device connected to the management station, the management station storage device configured with a database, the database storing the statistical information for the group of volumes and a threshold value associated with statistical information for the group of volumes; and

the management station further configured to compare monitored statistical information for the group of volumes with the threshold value and determine that an event has occurred when the monitored statistical information exceeds the threshold value and to notify an interested party of the event.

As a summary of the argument set out hereinabove, Applicant respectfully urges that the cited art, De Jong, Manghirmalani, and Chu, has no disclosure of the invention as set out in Claim 104.

Applicant respectfully urges that nowhere in these cited lines of the cited patents,

De Jong, Manghirmalani, and Chu, is there any disclosure of Applicant's claimed novel ***to allow a user to organize two or more volumes from the plurality of storage appliances into a group of volumes . . . statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes***. That is, there is no disclosure in the cited lines of DeJong of Applicant's claimed ***group of volumes***. And, there is definitely no disclosure in the cited art of Applicant's claimed ***the management station further configured to compare monitored statistical information for the group of volumes with the threshold value and determine that an event has occurred when the monitored statistical information exceeds the threshold value and to notify an interested party of the event***.

That is, Applicant respectfully urges that the cited art De Jong, Manghirmalani, and Chu is legally incapable of rendering Claim 104 unpatentable under 35 U.S.C. 103(a) because of the absence from each of the cited patents, De Jong, Manghirmalani, and Chu, of Applicant's claimed ***to allow a user to organize two or more volumes from the plurality of storage appliances into a group of volumes . . . statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes***.

Further, each cited patent individually teaches away from Applicant's claimed invention.

DeJong teaches using a graphical user interface (GUI) to build RAID arrays to serve various clients, where icons on the GUI refer to various storage disks which are assembled into a network. A person of ordinary skill in the art would be led, by the disclosure of DeJong, to understand that the GUI is only used to assemble a network where storage devices are assigned to selected clients. The person of ordinary skill in the art would thereby be led to completely miss Applicant's claimed volumes, and groups of volumes. That is a person of ordinary skill in the art would be led away from Applicant's claimed ***to allow a user to organize two or more volumes from the plurality of storage appliances into a group of volumes . . . statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes***. Applicant's ***groups of volumes*** are a higher level of logical organization than taught by DeJong, and so the person of ordinary skill in the art would be led to completely miss applicant's claimed invention by following the teachings of DeJong.

Manghirmalani discloses agents operating on devices connected to a computer network. The agents each send reports to a central network management station for a user to monitor the computer network's functionality, that is the network's "health". Again, a person of ordinary skill in the art would be led astray from Applicant's claimed invention by the teachings of Manghirmalani, in that Manghirmalani has no disclosure of

any higher level organization of information gathered from his network comparable to Applicant's claimed ***group of volumes***. Manghirmalani discloses a network which has nodes at various distributed locations, "corporate downtown", field offices (1, 2, and 3), and windows in his graphical user interface to give network performance at different times. Manghirmalani's network is essentially one of Applicant's volumes, and there is no suggestion of creating a plurality of volumes, and no hint of combining ***groups of volumes*** for a consolidated reporting of statistical information to a particular interested user. Accordingly, a person of ordinary skill in the art would be led astray from Applicant's claimed invention by following the teachings of Manghirmalani, as the person would be led to completely miss Applicant's claimed ***statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes***.

Chu discloses using a graphical user interface to designate data storage devices to serve in a particular data storage network, the devices to provide storage for designated computers also connected to the data storage network. Again, Chu has no disclosure of Applicant's claimed groups of ***volumes***, and combining selected volumes into ***groups of volumes*** in order to provide ***statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes***. Accordingly, a person of ordinary skill in the art, in following the teachings of the Chu patent, would again be led astray from the higher order logical organization claimed by Applicant.

Claims 82, 84, 95, 97, and 110

Claims 82, 84, 95, 97, and 110 are believed to be allowable as they are dependent from independent claims, and the independent claims are believed to be allowable.

Claims 87, 100, and 105

Claims 87, 100, and 105 are believed to be allowable as they are dependent from independent claims, and the independent claims are believed to be allowable.

All independent claims are believed to be in condition for allowance.

All dependent claims are dependent from independent claims which are believed to be in condition for allowance. Accordingly, all dependent claims are believed to be in condition for allowance.

Favorable action is respectfully solicited.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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(J) CLAIMS APPENDIX:

77. A method for managing a computer network, comprising:

operating a plurality of servers connected to the network, each server of the plurality of servers connected to one or more storage devices;

organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

identifying a party interested in statistical information related to operation of the group of volumes using the graphical user interface;

polling all servers within the group of volumes, by a monitoring process, for statistical information;

combining statistical information from the servers within the group of volumes in order to provide a statistical information for the group of volumes;

displaying, on the graphical user interface, the statistical information for the group of volumes;

comparing the monitored statistical information to a threshold value to determine whether an event has occurred; and

in response to determining that an event has occurred, notifying the interested party.

78. The method according to Claim 77, further comprising:

determining the identity of the party in response to a predetermined event condition.

79. The method according to Claim 78, further comprising:

setting the threshold value for a parameter of a storage device in the group of volumes; and

determining the event condition in response to the parameter exceeding the threshold value.

80. The method according to Claim 79, further comprising:

including in the parameters at least one of a central processing utilization level, a storage disk free space, a storage disk used space, and environmental condition, and an operational status.

81. The method according to Claim 77, further comprising:

sending by e-mail to the party a notification of the statistical iinformation related to the selected group of volumes.

82. The method according to Claim 81, further comprising:

including at least one web link in the e-mail for use by the interested party.

83. The method according to Claim 77, further comprising:

retaining information with respect to the interested party in a database.

84. The method according to Claim 77, further comprising:

reporting the statistical information related to the group of volumes to a web page so that the party can obtain the statistical information by accessing the web page.

85. The method according to Claim 77, further comprising:

presenting the statistical information related to the group of volumes through a graphical user interface.

86. The method according to Claim 77, further comprising:

placing alerts on the graphical user interface, the alerts identifying a problem condition shown by the statistical information related to the group of volumes.

87. The method according to Claim 86, further comprising:

coding the alerts with color to indicate a severity of the problem condition.

88. The method according to Claim 77, further comprising:

consolidating the statistical information related to the group of volumes with a statistical information related to an another group of volumes.

89. The method according to Claim 77, further comprising:

using a RAID array of disks as a storage device of the one or more storage devices.

90. A computer network apparatus, comprising:

a plurality of servers, each server of the plurality of servers connected to one or more storage devices;

a plurality of volumes stored across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

a group of volumes formed by consolidating two or more selected volumes of the plurality of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

statistical information related to operation of the group of volumes, the statistical information identified as being of interest to a party using the graphical user interface;

a monitoring process used to poll all servers within the group of volumes;

statistical information combined from the servers within the group of volumes in order to provide a statistical information for the group of volumes;

the graphical user interface further configured to display the statistical information for the group of volumes;

the monitored statistical information is compared to a threshold value to determine whether an event has occurred; and

the party is notified if it is determined that an event has occurred.

91. The apparatus according to Claim 90, further comprising:

an event condition, the identity of the party determined in response to the event condition.

92. The apparatus according to Claim 91, wherein the

threshold value is set for a parameter of a storage device in the group of volumes; and

the event condition is determined in response to the parameter exceeding the threshold value.

93. The apparatus according to Claim 92, further comprising:

the parameters selected from at least one of a central processing utilization level, a storage disk free space, a storage disk used space, and environmental condition, and an operational status.

94. The apparatus according to Claim 90, further comprising:

an e-mail message sent to the party, the e-mail message referring to the statistical information related to the selected group of volumes.

95. The apparatus according to Claim 94, further comprising:

at least one web link included in the e-mail message for use by the interested party.

96. The apparatus according to Claim 90, further comprising:

a database to retain information with respect to the interested party.

97. The apparatus according to Claim 90, further comprising:

a web page to report the statistical information related to the group of volumes so that the party can obtain the statistical information by accessing the web page.

98. The apparatus according to Claim 90, further comprising:

a graphical user interface to present the statistical information related to the group of volumes.

99. The apparatus according to Claim 98, further comprising:

alerts placed on the graphical user interface, the alerts identifying a problem condition shown by the statistical information related to the group of volumes.

100. The apparatus according to Claim 99, further comprising:

color to code the alerts to indicate a severity of the problem condition.

101. The apparatus according to Claim 90, further comprising:

the statistical information related to the group of volumes consolidated with a statistical information related to an another group of volumes.

102. The apparatus according to Claim 90, further comprising:

a RAID array of disks used as a storage device of the one or more storage devices.

103. A computer readable storage media, comprising:

said computer readable media containing instructions for execution on a processor for the practice of a method of managing a computer network, the method having the steps of,

operating a plurality of servers connected to the network, each server of the plurality of servers connected to one or more storage devices;

organizing a plurality of volumes across the plurality of servers, wherein each volume is a logical arrangement of the one or more storage devices connected to a particular server;

consolidating two or more selected volumes of the plurality of volumes into a group of volumes using a graphical user interface, wherein at least two volumes in the group of volumes are located on separate servers of the plurality of servers;

identifying a party interested in statistical information related to operation of the group of volumes using the graphical user interface;

polling all servers within the group of volumes, by a monitoring process, for statistical information;

combining statistical information from the servers within the group of volumes in order to provide a statistical information for the group of volumes;

displaying, on the graphical user interface, the statistical information for the group of volumes;

comparing the monitored statistical information to a threshold value to determine whether an event has occurred; and

in response to determining that an event has occurred, notifying the interested party.

104. A system, comprising:

a plurality of storage appliances, wherein each storage appliance is configured with at least one volume and each volume is a logical arrangement of a plurality of storage devices;

a management station executing on a separate server from the plurality of storage appliances, the management station configured to access usage and performance information on the plurality of storage appliances and associated volumes;

a graphical user interface (GUI) connected to the management station, the GUI configured to allow a user to organize two or more volumes from the plurality of storage appliances into a group of volumes, and the GUI configured to display statistical information relating to the group of volumes, wherein at least two volumes in the group of volumes are located on separate storage appliances of the plurality of storage appliances;

statistical information combined from the storage appliances within the group of volumes in order to provide a statistical information for the group of volumes;

a management station storage device connected to the management station, the management station storage device configured with a database, the database storing the statistical information for the group of volumes and a threshold value associated with statistical information for the group of volumes; and

the management station further configured to compare monitored statistical information for the group of volumes with the threshold value and determine that an event has occurred when the monitored statistical information exceeds the threshold value and to notify an interested party of the event.

105. The system of claim 104, wherein the statistical information stored on the database is bundled in various time periods of days, weeks, quarters, or years that each have roughly a same number of intervals, each bundle having a different relative time span between respective intervals to have samples for more recent time periods maintained in smaller intervals, while samples for older time periods are maintained at successively longer sample intervals.

106. The system of claim 104, wherein the management station is connected over a LAN to the plurality of storage appliances.

107. The system of claim 104, wherein each volume is formed from two or more RAID groups within the plurality of storage devices.

108. The system of claim 104, wherein the interested party is notified by an email, alarm, alert, telephone call, or page that is sent using an automated system.

109. The system of claim 104, wherein the interested party is one or more users, administrators, or managers.

110. The system of claim 104, further comprising:

a command process that generates displays on the statistical information using a web-based format that is accessed by a browser on the management station's graphical user interface or on an interested party's client display.

(K) EVIDENCE APPENDIX:

None

(L) RELATED PROCEEDINGS APPENDIX:

None